

CLAIMS

What is claimed is:

1. A method for promoting cardiac tissue repair comprising administering to the cardiac tissue a therapeutically effective amount of an angiogenic thrombin derivative peptide or a physiologically functional equivalent thereof.
2. The method according to Claim 1 wherein said peptide comprises a thrombin receptor binding domain having the sequence Arg-Gly-Asp-Ala (SEQ ID NO. 1); and a serine esterase conserved sequence.
3. The method of Claim 2 wherein the serine esterase conserved sequence comprises Asp-Ala-Cys-Glu-Gly-Asp-Ser-Gly-Gly-Pro-Phe-Val (SEQ ID NO. 2).
4. The method of Claim 2 wherein the thrombin derivative peptide comprises the amino acid sequence: Ala-Gly-Tyr-Lys-Pro-Asp-Glu-Gly-Lys-Arg-Gly-Asp-Ala-Cys-Glu-Gly-Asp-Ser-Gly-Gly-Pro-Phe-Val (SEQ ID NO. 3).
5. The method of Claim 1 wherein the thrombin derivative peptide consists of the amino acid sequence Ala-Gly-Tyr-Lys-Pro-Asp-Glu-Gly-Lys-Arg-Gly-Asp-Ala-Cys-Glu-Gly-Asp-Ser-Gly-Gly-Pro-Phe-Val (SEQ ID NO. 3).
6. The method of Claim 1, wherein the cardiac tissue is administered a therapeutically effective amount of a physiologically equivalent thrombin derivative peptide comprising a C-terminal amide.
7. The method of Claim 1, wherein the cardiac tissue is administered a therapeutically effective amount of a physiologically functional equivalent

thrombin derivative peptide comprising Ala-Gly-Tyr-Lys-Pro-Asp-Glu-Gly-Lys-Arg-Gly-Asp-Ala-Cys-Glu-Gly-Asp-Ser-Gly-Gly-Pro-Phe-Val-CONH₂ (SEQ ID NO: 4).

8. The method of Claim 1, wherein the cardiac tissue is administered a therapeutically effective amount of a physiologically functional equivalent thrombin derivative peptide consists of Ala-Gly-Tyr-Lys-Pro-Asp-Glu-Gly-Lys-Arg-Gly-Asp-Ala-Cys-Glu-Gly-Asp-Ser-Gly-Gly-Pro-Phe-Val-CONH₂ (SEQ ID NO: 4).
9. The method of Claim 1 wherein the peptide is administered during or following cardiac surgery.
10. The method of Claim 1 wherein the peptide is administered by injection into the cardiac tissue.
11. The method of Claim 1 wherein a sustained release formulation comprising the angiogenic thrombin derivative peptide is administered to the cardiac tissue.
12. The method of Claim 11 wherein the sustained release formulation is a polylactic acid/polyglycolic acid microparticles comprising the angiogenic thrombin derivative peptide or the physiologically functional equivalent thereof.
13. A method of stimulating revascularization comprising administering to cardiac tissue a therapeutically effective amount of an angiogenic thrombin derivative peptide or a physiologically functional equivalent thereof.
14. A method of stimulating vascular endothelial cell proliferation in a patient in need of such treatment comprising administering to the patient a therapeutically

effective amount of an angiogenic thrombin derivative peptide or a physiologically functional equivalent thereof.

15. A method of inhibiting restenosis in a patient following balloon angioplasty, said method comprising administering to the patient a therapeutically effective amount of an angiogenic thrombin derivative peptide or a physiologically functional equivalent thereof.
16. The method of Claim 15 wherein the peptide is coated onto a balloon angioplasty catheter.
17. The method of Claim 15 wherein the peptide is administered systemically.
- 10 18. The method of Claim 15 wherein the peptide is administered locally to a balloon induced damaged area of a blood vessel.
19. The method of Claim 15 wherein a stent coated with the peptide is inserted into a blood vessel at a balloon induced damaged area.
20. The method of Claim 15 wherein the peptide comprises a thrombin receptor binding domain having the sequence Arg-Gly-Asp-Ala (SEQ ID NO. 1); and a 15 serine esterase conserved sequence.
21. The method of Claim 20 wherein the serine esterase conserved sequence comprises Asp-Ala-Cys-Glu-Gly-Asp-Ser-Gly-Gly-Pro-Phe-Val (SEQ ID NO. 2).
22. The method of Claim 20 wherein the thrombin derivative peptide comprises the 20 amino acid sequence: Ala-Gly-Tyr-Lys-Pro-Asp-Glu-Gly-Lys-Arg-Gly-Asp-Ala-Cys-Glu-Gly-Asp-Ser-Gly-Gly-Pro-Phe-Val (SEQ ID NO. 3).

23. The method of Claim 15 wherein the thrombin derivative peptide consists of the amino acid sequence Ala-Gly-Tyr-Lys-Pro-Asp-Glu-Gly-Lys-Arg-Gly-Asp-Ala-Cys-Glu-Gly-Asp-Ser-Gly-Gly-Pro-Phe-Val (SEQ ID NO. 3).

24. The method of Claim 15, wherein the patient is administered a therapeutically effective amount of a physiologically functional equivalent physiologically equivalent thrombin derivative peptide comprising a C-terminal amide.

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25. The method of Claim 15, wherein the patient is administered a therapeutically effective amount of a physiologically functional equivalent thrombin derivative peptide comprising Ala-Gly-Tyr-Lys-Pro-Asp-Glu-Gly-Lys-Arg-Gly-Asp-Ala-Cys-Glu-Gly-Asp-Ser-Gly-Gly-Pro-Phe-Val-CONH₂ (SEQ ID NO: 4).

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26. The method of Claim 15, wherein the patient is administered a therapeutically effective amount of a physiologically functional equivalent thrombin derivative peptide consisting of Ala-Gly-Tyr-Lys-Pro-Asp-Glu-Gly-Lys-Arg-Gly-Asp-Ala-Cys-Glu-Gly-Asp-Ser-Gly-Gly-Pro-Phe-Val-CONH₂ (SEQ ID NO: 4).

15 27. A stent coated with an angiogenic thrombin derivative peptide or a physiologically functional equivalent thereof.

28. A method of inhibiting vascular occlusion in a patient, said method comprising administering to the patient a therapeutically effective amount of a thrombin derivative peptide or a physiologically functional equivalent thereof.